In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (original):

A method of producing an m x N sheet of optical fibers, comprising:

co-extruding a core material and a cladding material through a co-extrusion die, wherein an m x N array of optical fibers is extruded each having a portion of the extruded core material surrounded by a portion of the cladding material, and wherein $m << N$;

merging adjacent optical fibers together after the m x N array of optical fibers exit the co-extrusion die to form an m x N sheet of optical fibers; and

cooling the m x N sheet of optical fibers so as to solidify the m x N sheet of optical fibers.

Claim 2 (original):

The method according to claim 1, wherein cooling the m x N sheet of optical fibers comprises taking up the m x N sheet of optical fibers on a cooling wheel after merging adjacent optical fibers together.

Claim 3 (currently amended):

The method according to claim ~~1~~ 2, further comprising:

drawing down the m x N sheet of optical fibers before cooling the m x N sheet of optical fiber.

Claim 4 (original):

The method according to claim 3, wherein drawing down the m x N sheet comprises rotating the cooling wheel at a rate which causes the m x N sheet of optical fibers to be taken up by the cooling wheel faster than the rate of extrusion from the co-extrusion die such that the m x N sheet is drawn down.

Claim 5 (original):

The method according to claim 4, wherein the m x N sheet of optical fibers is taken up at least ten times faster than the rate of extrusion from the co-extrusion die.

Claim 6 (original):

The method according to claim 3, wherein after drawing down the m x N sheet of optical fibers, the m x N sheet of optical fibers has a desired cross-sectional shape.

Claim 7 (original):

The method according to claim 3, wherein after drawing down the m x N sheet of optical fibers, the optical fibers have a desired index of refraction profile.

Claim 8 (original):

The method according to claim 1, further comprising:

co-extruding a sea material through the co-extrusion die, wherein the m x N array of optical fibers is extruded each having the portion of the extruded core surrounded by the portion of the cladding material, further surrounded by a portion of the sea material, wherein the sea material is strongly light absorbing.

Claim 9 (original):

The method according to claim 1, further comprising:

co-extruding a sea material through the co-extrusion die, wherein the m x N array of optical fibers is extruded each having the portion of the extruded core surrounded by the portion of the cladding material, further having a portion of the sea material on at least a portion of an outer boundary of the cladding material such that after merging adjacent optical fibers together to form an m x N sheet of optical fibers the sea material is on at least one surface of the m x N sheet.

Claim 10 (original):

The method according to claim 8, wherein the sea material is positioned between adjacent optical fibers in a first direction and not between adjacent optical fibers in a second direction.

Claim 11 (original):

The method according to claim 1, wherein $1 \leq m \leq 4$.

Claim 12 (original):

The method according to claim 11, wherein $N \geq 100$.

Claim 13 (original):

The method according to claim 4, wherein the m x N sheet of optical fibers is taken up at least about 1.5 to about 30 times faster than the rate of extrusion from the co-extrusion die.

Claim 14 (original):

The method according to claim 1, wherein the optical fibers have diameters in the range of about 2 microns to about 2,000 microns.

Claim 15 (original):

The method according to claim 1, wherein the core material comprises one or more materials selected from the group consisting of polystyrene, polymethyl methacrylate, polybenzyl methacrylate, polycarbonate, copolymers thereof, and other compounds copolymerizable therewith.

Claim 16 (original):

The method according to claim 1, wherein the cladding material comprises one or more materials selected from the group consisting of: polyethyl methacrylate, poly-2, 2, 2-trifluoroethyl methacrylate, polyvinyl acetate, copolymers thereof, and other compounds copolymerizable therewith.

Claim 17 (original):

The method according to claim 1, wherein the optical fibers' refractive indices change discontinuously at the core-cladding boundary.

Claim 18 (original):

The method according to claim 1, wherein the optical fibers' refractive indices change over a finite distance near the core-cladding boundary thereby varying in a continuous manner at the core-cladding boundary.

Claim 19 (original):

19. An m x N sheet of optical fibers produced in accordance with the method of claim 1.

Claim 20 (original):

An m x N sheet of optical fibers produced in accordance with the method of claim 13.

Claims 21-45 (canceled)

Claim 46 (new)

The method according to claim 4, wherein the mxN sheet of optical fibers is taken up at least 1.5 times faster than the rate of extrusion from the co-extrusion die.

Claim 47 (new)

The method according to claim 4, wherein the mxN sheet of optical fibers is taken up at least 2 times faster than the rate of extrusion from the co-extrusion die.

Claim 48 (new)

The method according to claim 4, wherein the mxN sheet of optical fibers is taken up 1.5 to 30 times faster than the rate of extrusion from the co-extrusion die.

Claim 49 (new):

The method according to claim 1, wherein at least one of the cladding material and the core material comprises one or more diffusible additives, wherein the one or more diffusible additives modify the reaction index of the at least one of the cladding material and the core material.

Claim 50 (new):

The method according to claim 49, wherein at least one of the one or more diffusible additives increases the refractive index of the at least one of the cladding material and the core material.

Claim 51 (new)

The method according to claim 50, wherein the at least one of the one or more diffusible additives is selected from the group consisting of benzophenome, biphenyl, 3-phenyltoluene, diphenyl sulphide and 1,2,4,5-tetrabromobenzene.

Claim 52 (new):

The method according to claim 49, wherein at least one of the one or more diffusible additives decreases the refractive index of the at least one of the cladding material and the core material.

Claim 53 (new):

The method according to claim 52, wherein at least one of the one or more diffusible additives is selected from the group consisting of: tributylphosphate, triethylphosphate, glycerol triacetate, methylperfluorooctanate, and perfluoro2,5,8-trimethyl-3,6,9-trioxadodecanoic acid methyl ester.

Claim 54 (new)

The method according to claim 1, wherein at least one of the optical fibers is a graded-index optical fiber.

Claim 55 (new)

The method according to claim 1, wherein the optical fibers are grade-index optical fibers.